

REMARKS

This Application has been carefully reviewed in light of the Final Office Action (“*Office Action*”) mailed May 19, 2005. Applicant amends Claim 24 to correct a typographical error, amends Claim 9 to its original form by incorporating the elements from Claim 23, and cancels Claim 23. Applicant respectfully requests reconsideration and full allowance of the present application.

Allowable Subject Matter

The Examiner has indicated that Claim 24 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. § 112, 2nd paragraph, set forth in the *Office Action*. Applicant amends Claim 24 to correct a typographical error, thus obviating the § 112 rejection. Claim 24 is now in condition for allowance in accordance with the Examiner’s indications.

Claim Rejections – 35 U.S.C. § 112

The Examiner rejects Claims 9-11, 13-14, and 23-24 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In making the rejection, the Examiner states:

Regarding claim 9, it is not clear which module is the optical interface module? Which interface is the optical line interface? and which card is the optical interface card. Figure 1 shows connectors 24 for connecting optical interface modules 20 to a conversion module 18, not to an optical interface card 12.

Office Action, page 2.

In Claim 9, “an optical interface module” is introduced in the preamble. Claim 9 recites that this optical interface module includes at least one line interface, a connector, and an electrical/optical converter. Thus without reference to the specification or figures, Applicant respectfully submits that Claim 9 is clear and satisfies the requirements of 35 U.S.C. § 112, second paragraph. Specifically, it is clear which module is the optical interface module (recited in the preamble) and which is the optical line interface (an element of the optical interface module).

In making the rejection, it appears that the Examiner attempts to equate the elements of Claim 9 with those detailed in Figure 1, which details an example embodiment. With reference to the figure and accompanying description, Figure 1 details an optical interface card 12 that includes a conversion module 18 and connectors 24. *Specification*, page 6. As described and illustrated, optical interface modules 20 couple to the connectors 24 on the optical interface card 12. Thus as illustrated and described, Figure 1 depicts optical interface modules 20 coupled to an optical interface card 12 (which includes a number of components, such as connectors 24 and conversion module 18). Applicant finds no ambiguity in Claim 9, nor any ambiguity introduced by the Figures or description. Rather, Applicant respectfully submits that Claim 9, standing alone, is clear and satisfies the requirements of 35 U.S.C. § 112, second paragraph, and that no reference to examples in the specification are required.

Applicant thus respectfully requests reconsideration and withdrawal of the rejection. If the Examiner wishes to discuss these issues further, Attorney for Applicant stands ready to conduct a conference at the convenience of the Examiner.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 6-8, 15, and 20-22

The Examiner rejects Claims 1, 6-8, 15, and 20-22 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,870,637 to Follett, et al. (“*Follett*”) in view of U.S. Patent No. 5,572,348 to Carlson, et al. (“*Carlson*”). To establish obviousness of a claimed invention under § 103, the prior art must be teach or suggest all claim limitations. M.P.E.P. § 2143.03. Applicant respectfully submits that *Follett* and *Carlson*, whether considered alone or in combination, fail to teach or suggest all elements of Applicant’s claims. Consider Claim 1, which recites:

An optical line interface assembly for insertion in a slot of a communications rack, the assembly comprising:

a board having a plurality of connectors each formed to couple to an optical interface module, the board further having a network interface and a conversion module linking the connectors and the network interface, the conversion module operable to convert signals between an optical protocol and an electrical protocol; and

a plurality of optical interface modules, each optical interface module having at least one optical line interface operable to couple to an optical signal line, the optical interface modules

removably coupled to the connectors to permit replacement of a selected one of the optical interface modules while another of the optical interface modules remains coupled to an associated optical signal line and while the network interface remains coupled to a backplane of a communications rack.

Among other aspects, Applicant respectfully submits that the proposed *Follett-Carlson* combination fails to teach or suggest:

a plurality of optical interface modules, each optical interface module having at least one optical line interface operable to couple to an optical signal line, the optical interface modules removably coupled to the connectors to permit replacement of a selected one of the optical interface modules while another of the optical interface modules remains coupled to an associated optical signal line and while the network interface remains coupled to a backplane of a communications rack.

With respect to the removable aspects of the optical interface modules, the Examiner agrees that *Follett* is deficient. *Office Action*, page 3. The Examiner relies on *Follett* as teaching all other aspects of Claim 1, and relies on *Carlson* for teaching removably connected optical modules. *Id.* However, an examination of the two references reveals that neither reference teaches the removable optical interface modules as required by Claim 1.

In general, *Follett* discloses a switching system in which a number of user circuits are interconnected by a backplane. *Follett*, Abstract. *Follett* proposes to interconnect the user circuits with a backplane formed from optical components to provide a high-speed backplane. *Follett*, col. 2, ll. 13-46. To support the optical backplane, *Follett* describes modules 11*i* that connect to the optical backplane using multifiber ribbon cables 12. *Follett*, Figure 1; col. 2, ln. 62 - col. 3, ln. 16. As detailed in *Follett*, "each separate module 11*i* provide[s] an interface between the optical backplane 10 and a separate associated user circuit 26." *Follett*, col. 3, ll. 20-22. Thus each user circuit connects to an interface module, which in turn connects to the optical backplane. *Follett* goes on to discuss in detail the components and operation of the interface modules. *Follett* does not, however, provide any detail with respect to the user circuits. In fact, *Follett* merely describes the user circuits as generic modules, stating:

User circuit 26 is simply representative of a source and destination for the electrical signals to and from backplane 10 and could reside

either on or external to module 11*i*. User circuit 26 could comprise data processing, data storage, and/or peripheral control devices.

Follett, col. 4, ll. 61-65. If one assumed, for arguments sake, that *Follett* suggested a communications rack with slots, the user circuits 26 of *Follett* would likely be considered the elements in these “slots.” Thus given these assumption and an attempt to correlate the elements of *Follett* with Claim 1, the user circuits 26 would likely be correlated to the optical line interface assembly as recited in Claim 1. However, *Follett* provides virtually no details with respect to the user circuits 26. *Follett* certainly fails to teach or suggest that these user circuits 26 would include optical interface modules, let alone the removable optical interface modules as claimed.

As an alternative, perhaps a comparison of *Follett* and Claim 1 could equate the interface modules 11*i* with the claimed line interface assembly of Claim 1. However, Claim 1 includes a network interface that couples to the backplane. Thus at best, the interface modules 11*i* of *Follett* would correspond to the network interface of Claim 1, while the user circuits 26 of *Follett* would still need to include optical interface modules. But as discussed above, the description of the user circuits 26 in *Follett* fails to teach or suggest the inclusion of any optical interface modules.

Carlson provides no help either. In general, *Carlson* discloses a “universal demarcation point” that provides an interface between a utility provider and subscriber owned equipment. *Carlson*, col. 3, ll. 8-14. As *Carlson* explains, the universal demarcation point is mounted to a subscriber’s house and allows the utility provider to easily connect services without needing access to the subscriber’s house. *Carlson*, col. 9, ll. 23-25. Rather, the service provider can simply connect service modules 22 to connectors 20 on the universal demarcation point. *Carlson*, Figure 1; col. 4, ll. 10-26. The universal demarcation point thus serves as an easily accessible utility box at a subscriber’s house. As examples of service module connected to the utility box, *Carlson* discusses optical service modules. These modules provide subscriber line termination for optical lines running to the subscriber’s home. *Carlson*, col. 6, ln. 20 - col. 8, ln. 8. These optical service modules in no way teach or suggest:

a plurality of optical interface modules, each optical interface module having at least one optical line interface operable to couple to an optical signal line, the optical interface modules

removably coupled to the connectors to permit replacement of a selected one of the optical interface modules while another of the optical interface modules remains coupled to an associated optical signal line and while the network interface remains coupled to a backplane of a communications rack.

Moreover, as guidance as to how the two references would be combined, the Office Action merely states that one would make the optical interface modules of *Follett* removable. *Office Action*, page 3. As discussed above, however, the only optical components disclosed by *Follett* are the interface modules 11*i*. If one of the interface modules of *Follett* is removed, the connection between the interface module and the optical backplane is severed. Any user circuit that relies on the affected interface module would also have its connection to the backplane severed. This fails to teach or suggest replacement of one optical interface on the assembly “while the network interface remains coupled to a backplane of a communications rack.” Thus even the Examiner’s proposed combination fails to teach or suggest the limitations required by Claim 1.

In addition, Applicant respectfully submits that the proposed combination of *Follett* and *Carlson* is improper. The M.P.E.P. sets forth a strict legal standard for combining or modifying references. According to the M.P.E.P., “[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. § 2143.01. “The mere fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination” or modification. *Id.* (emphasis in original).

Governing Federal Circuit case law makes this strict legal standard even clearer. According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation . . . is an ‘essential component of an obviousness holding.’” *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000) (quoting *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998)). Furthermore, while “evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to

be solved, [t]he range of sources available . . . does not diminish the requirement for actual evidence.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Thus, it is a factual question that cannot be resolved on subjective belief and unknown authority, but must be based on objective evidence of record. *See In re Lee*, 277 F.3d 1338, 1343-44 (Fed. Cir. 2002). Indeed, the factual inquiry whether to combine or modify references must be thorough and searching. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52 (Fed. Cir. 2001).

Applicant respectfully submits that the Examiner has failed to cite any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Follett* and *Carlson*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, with regard to independent Claim 1, the Examiner states:

Therefore, it would have been obvious to an artisan at the time of invention to provide connectors or means for the selective removal of optical interface modules of *Follett* from the backplane, as such connections are taught by *Carlson*, to easily replace and change the optical interface modules of *Follett* in case of damage or circuit failures.

Office Action, page 3.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Moreover, as discussed above, *Follett* discloses an optical backplane for interconnecting multiple circuits, while *Carlson* discloses a utility box. These two references deal with non-analogous subject matter.

For at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of independent Claim 1. For reasons analogous to those discussed above with regard to Claim 1, Applicant also respectfully requests the Examiner to reconsider and withdraw the rejection of independent Claim 15. Claims 6-8 and 20-22 depend from

Claims 1 and 15 respectively. Thus, because they depend from independent Claims shown above to be allowable over *Follett* and *Carlson*, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 1, 6-8, 15, and 20-22.

Claims 9-11, 13-14, and 23

As noted above, Applicant amends Claim 9 to its original form by incorporating the elements from Claim 23 and cancels Claim 23. Thus Applicant addresses Claim 9 and all of its dependent claims with respect to the Examiner's treatment of now canceled Claim 23, which rejects Claim 23 under 35 U.S.C. § 103(a) as unpatentable over *Follett* in view of U.S. Patent No. 4,733,093 to Graves, et al. ("*Graves*") and in view of U.S. Patent No. 5,069,522 to Block, et al. ("*Block '522*") and in further view of U.S. Patent No. 4,953,930 to Ramsey, et al. ("*Ramsey*"). Claim 9, as amended, recites:

An optical interface module comprising:
at least one optical line interface for coupling to an optical line;
a connector for removably coupling the optical interface module to an optical interface card; and
an electrical/optical converter operable to convert between optical signals communicated by the optical line interface and electrical signals communicated by the connector;
wherein the optical line interface receives optical signals that comprise a serial bit stream and a bit-clock; and
wherein the electrical/optical converter converts the serial bit stream and the bit-clock into electrical signals and communicates the electrical signals via the connector to a framing device on the interface card for conversion into asynchronous transfer mode (ATM) cells.

In addressing the elements of this claim, the Office Action stitches together random elements from four different references. Applicant respectfully submits that this piecemeal reconstruction of claim elements from disparate references improperly fails to consider the claim as a whole, and the Examiner's reasons for the proposed combination demonstrate a clear case of impermissible hindsight reconstruction.

As the motivation for the proposed *Follett-Graves-Block-Ramsey* combination, the Office Action states:

As is taught by Graves, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a removable connector to couple the optical interface module 23 to module 22, in the electro-optical data transmission module of Follett to provide an easy removal and exchange of the optical interface module. Furthermore, it is well known that optical or electrical interface modules such as electro-optical modules of Follett can be detachably connected to connectors for an easy removal or exchange of such modules. . . .

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an opto-electric conversion module such as the one of Block for the conversion module in the optical interface of Follett in order to receive optical signal and convert the received parallel optical signal into electrical signals and to further serialize the received data signals. . . .

Therefore, it would have been obvious to an artisan at the time of invention to incorporate a deserializer such as the one of Ramsey for the deserializer in the modified optical interface module of Follett, Graves, and Block in order to provide conversion of data into an ATM mode to transmit a wide range of data types.

Office Action, pages 5, 9, and 10. These conclusory statements provide no guidance or objective evidence for the propriety of the combination. Rather, these statements reflect a logic that would permit random combinations of text from any number of references, so long as the resulting combination could be said to provide similar advantages or operations to those provided by an applicant's claims. Such combinations are not permissible. Speculation in hindsight that it would have been obvious to make a proposed combination because the proposed combination would be helpful is insufficient under the M.P.E.P.¹ and governing Federal Circuit case law.²

¹ See M.P.E.P. § 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.")

² For example, in *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999), the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that evidence of a suggestion, teaching, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's

Furthermore, the Examiner states on page 5 of the Office Action that “it is well known that optical or electrical interface modules such as electro-optical modules of Follett can be detachably connected to connectors for an easy removal or exchange of such modules.” Applicants respectfully traverse. To the extent that the Examiner maintains this assertion based on “Official Notice,” “well known prior art,” “common knowledge,” or other information within the Examiner’s personal knowledge, Applicants respectfully request that the Examiner cite a reference in support of these positions or provide an affidavit in accordance with M.P.E.P. § 2144.03 and 37 C.F.R. § 1.104(d)(2).

For at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of independent Claim 9 and its dependent claims.

Claims 2-3 and 16-17

The Examiner rejects Claims 2-3 and 16-17 under 35 U.S.C. § 103(a) as unpatentable over *Follett* in view of *Carlson* and in further view of U.S. Patent No. 4,850,044 to Block, et al. (“*Block ‘044*”). *Block ‘044* fails to remedy any of the deficiencies discussed above with respect to the rejection of Claim 1 based on the proposed *Follett-Carlson* combination. Moreover *Block ‘044* fails to provide any motivation for the proposed *Follett-Carlson* combination or the addition of *Block ‘044* to the combination. Thus for the reasons discussed above with respect to Claim 1, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to Claims 2-3 and 16-17.

Claims 4 and 18

The Examiner rejects Claims 4 and 18 under 35 U.S.C. § 103(a) as unpatentable over *Follett* in view of *Carlson* and in further view of U.S. Patent No. 6,345,986 to Follingstad, et al. (“*Follingstad*”). *Follingstad* fails to remedy any of the deficiencies discussed above with respect to the rejection of Claim 1 based on the proposed *Follett-Carlson* combination.

disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted). See also *In Re Jones*, 958 F.2d 347 (“Conspicuously missing from this record is any evidence, other than the PTO’s speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at [the claimed invention].”).

Moreover *Follingstad* fails to provide any motivation for the proposed *Follett-Carlson* combination or the addition of *Follingstad* to the combination. Thus for the reasons discussed above with respect to Claim 1, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to Claims 4 and 18.

Claims 5 and 19

The Examiner rejects Claims 5 and 19 under 35 U.S.C. § 103(a) as unpatentable over *Follett* in view of *Carlson* and in further view of U.S. Patent No. 6,570,982 to Weir (“*Weir*”). *Weir* fails to remedy any of the deficiencies discussed above with respect to the rejection of Claim 1 based on the proposed *Follett-Carlson* combination. Moreover *Weir* fails to provide any motivation for the proposed *Follett-Carlson* combination or the addition of *Weir* to the combination. Thus for the reasons discussed above with respect to Claim 1, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to Claim 5.

Claim 10

The Examiner rejects Claim 10 under 35 U.S.C. § 103(a) as unpatentable over *Follett* in view of *Graves* and in further view of *Follingstad*. *Follingstad* fails to remedy any of the deficiencies discussed above with respect to the rejection of Claim 9 based on the proposed *Follett-Graves-Block-Ramsey* combination. Moreover *Follingstad* fails to provide any motivation for the proposed *Follett-Graves-Block-Ramsey* combination or the addition of *Follingstad* to the combination. Thus for the reasons discussed above with respect to Claim 9, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to Claim 10.

Claim 11

The Examiner rejects Claim 11 under 35 U.S.C. § 103(a) as being unpatentable over *Follett* in view of *Graves* and in further view of *Weir*. *Weir* fails to remedy any of the deficiencies discussed above with respect to the rejection of Claim 9 based on the proposed *Follett-Graves-Block-Ramsey* combination. Moreover *Weir* fails to provide any motivation for the proposed *Follett-Graves-Block-Ramsey* combination or the addition of *Weir* to the

combination. Thus for the reasons discussed above with respect to Claim 9, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to Claim 11.

CONCLUSION

Applicant has made an earnest attempt to place the Application in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims. If the Examiner feels that a telephone conference or an interview would advance prosecution of the Application in any manner, the undersigned attorney for Applicant stands ready to conduct such a conference at the convenience of the Examiner.

No fee is believed to be due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

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